

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) An apparatus for processing semiconductor substrates, the apparatus comprising:
 - a chamber defining a processing region therein;
 - a substrate support disposed in the chamber to support a semiconductor substrate;
 - at least one nozzle extending into the chamber to introduce a process gas into the chamber through a nozzle opening; and
 - at least one heat shield, each heat shield disposed around at least a portion of one of the at least one nozzle, the heat shield having an extension which projects distally of the nozzle opening of the nozzle and which includes a heat shield opening for the process gas to flow therethrough from the nozzle opening, the heat shield being spaced from the nozzle by a gap,
wherein the gap between the heat shield and the nozzle is smaller than a thickness of the heat shield.
2. (Original) The apparatus of claim 1 wherein the heat shield comprises a ceramic material.
3. (Original) The apparatus of claim 1 wherein the heat shield comprises a material selected from the group consisting of aluminum oxide, aluminum nitride, and silicon carbide.

4. (Original) The apparatus of claim 1 wherein the extension of the heat shield projects distally of the nozzle opening by a distance of between about a radius of the nozzle and about a diameter of the nozzle.

5. (Original) The apparatus of claim 1 wherein the heat shield is disposed around substantially the entire nozzle extending inside the chamber.

6. (Original) The apparatus of claim 1 wherein a plurality of nozzles are disposed around the substrate support and each nozzle has a heat shield disposed around at least a portion thereof.

7. (Original) The apparatus of claim 6 wherein the heat shields are disposed around the substrate support and configured such that the heat shield openings of the heat shields are disposed radially outwardly of a periphery of the semiconductor substrate.

8. (Original) The apparatus of claim 1 wherein the heat shield comprises a hollow, cylindrical member.

9. (Previously Presented) A heat shield for shielding a nozzle extending into a chamber to introduce a process gas into the chamber through a nozzle opening, wherein the chamber defines a processing region therein and has a substrate support to support a semiconductor substrate for processing in the chamber, the heat shield comprising:

a hollow member configured to be coupled with the nozzle and having an internal dimension sufficiently large to be disposed around at least a portion of the nozzle, the hollow member having an extension which projects distally of the nozzle opening of the nozzle and which includes a heat shield opening for the process gas to flow therethrough from the nozzle opening, the hollow member being spaced from the nozzle by a gap which is smaller than a thickness of the hollow member.

10. (Original) The heat shield of claim 9 wherein the hollow member is cylindrical and has an internal cross-section which is slightly larger than an external cross-section of the nozzle.

11. (Original) The heat shield of claim 9 wherein the hollow member comprises a ceramic material.

12. (Original) The heat shield of claim 9 wherein the extension of the heat shield is sized to project distally of the nozzle opening by a distance of between about a radius of the nozzle and about a diameter of the nozzle.

13.-20. (Canceled)

21. (Previously Presented) The apparatus of claim 1 wherein the heat shield is integrally formed with the nozzle.

22. (Previously Presented) The apparatus of claim 1 wherein the heat shield is coupled with the nozzle by a threaded connection.

23. (Previously Presented) The heat shield of claim 9 wherein the heat shield is integrally formed with the nozzle.

24. (Previously Presented) The heat shield of claim 9 wherein the heat shield is coupled with the nozzle by a threaded connection.